

**REMARKS**

**Introductory Comments:**

Claims 55, 56, 58-72, 74-87, and 99-102 were examined in the Office Action dated October 30, 2003.

Claims 55, 56, 58-72, 74-87, and 99-102 were rejected under 35 U.S.C. §112, first paragraph, as allegedly being amended to include new matter.

Claims 55, 56, 58-72, 74-87, and 99-102 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,463,564 to Agrafiotis *et al.* in view of Uhlmann *et al.* (1990) further in view of U.S. Patent No. 5,639,603 to Dower *et al.*, taken further in view of either U.S. Patent No. 5,720,923 to Haff *et al.* or U.S. Patent No. 5,650,122 to Harris *et al.*

These rejections are traversed for the reasons discussed below.

**Addressing the Examiner's Rejections**

**Rejections of the Claims Under 35 U.S.C. §112**

The Examiner has rejected claims 55, 56, 58-72, 74-87, and 99-102 under 35 U.S.C. §112, first paragraph, as allegedly being amended to include new matter. The Examiner states: "the combination of thermodynamic property "and" the listed properties to control the generating step in claim 55 has not been found as filed regarding written basis." (Page 2, lines 7-9 from bottom of the Final Office Action.) Further, the phrase "and combinations thereof" was not found as filed.

The applicants traverse the rejection. According to the MPEP § 2163: "While there is no *in haec verba* requirement, newly added claim limitations must be supported in

the specification through express, implicit, or inherent disclosure.” Thus, the specification does not have to literally recite the wording of the claims in order to fulfill the Written Description requirement.

The specification, as filed, provides for the evaluation of the thermodynamic properties (page 16, line 26, to page 19, line 6). The specification then discusses the evaluation of target accessibility (page 19, line 7 to page 20, line 23), targeting to functional regions of target nucleic acid sequence (page 20, line 24 to page 21, line 16), or uniform distribution to target nucleic acid sequence (page 21, line 17, to page 22, line 2). On page 19, lines 16-19, in discussing target accessibility, the specification states:

“Following the calculation of thermodynamic properties ending at step 317, the desired sequence properties to be scored are selected at step 324. As many or as few as desired can be selected; optionally, none will be selected.”

The disclosure thus implicitly states that thermodynamic property can optionally be combined with target accessibility.

Similarly, on page 20, lines 25-28, the specification states that if a decision is made to target the functional regions, then process of step 350 is done, otherwise, the process proceeds to step 375, which is the selection of the uniform distribution of target nucleic acid sequences. Further, on page 21, lines 18-21, the specification states that a large number of oligonucleotide sequences may result from the process thus far whether or not targeting functional sites is desired. Therefore, a decision is made whether or not to uniformly distribute the selected oligonucleotides along the target. Thus, the

specification states that uniform distribution of oligonucleotides can be combined with thermodynamic properties in addition to target accessibility and/or targeting to functional regions.

Taken together, the specification clearly provides support for the combination of thermodynamic property with one or more of target accessibility, targeting to functional regions of target nucleic acid sequence, or uniform distribution to target nucleic acid sequence. The amendment to the claims was therefore not New Matter, and the Examiner is respectfully requested to withdraw the rejection.

### **Rejections of the Claims Under 35 U.S.C. §103**

The Examiner has rejected claims 55, 56, 58-72, 74-87, and 99-102 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Agrafiotis *et al.* in view of Uhlmann *et al.* further in view of U Dower *et al.*, taken further in view of either Haff *et al.* or Harris *et al.* The Examiner stated that the rejection was maintained in anticipation of removal of the New Matter thus leaving the claims rejected as before.

The applicants traverse the rejection and supporting remarks as the references cited by the Office do not teach or suggest the claimed invention. As discussed in detail above, the amendments to the claims do not constitute New Matter. The currently pending claims for generating or evaluating compounds according to thermodynamic property and at least one other criteria selected from target accessibility, targeting to functional regions of target nucleic acid sequence, or uniform distribution to target nucleic acid sequence, and combinations thereof are not taught or suggested by the combination of the cited references, as discussed in the Office Action mailed on August

4, 2003. Therefore, the Office has not established a *prima facie* case of obviousness, and the Examiner is therefore respectfully requested to withdraw the rejection.

### CONCLUSION

Applicants respectfully submit that the claims define an invention that is patentable over the art. Accordingly, a Notice of Allowance is believed in order and is respectfully requested.

If the Examiner notes any further matters which the Examiner believes may be expedited by a telephone interview, the Examiner is requested to contact the undersigned.

Respectfully submitted,  
*Cowsert et al.*

Date: \_\_\_\_\_

By: \_\_\_\_\_

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